

CHAPTER III

RESEARCH METHOD

A. Research Design

The method of this study was quantitative method. The design was quasi-experimental design. The quasi experimental design is provides a test to know the impact of a treatment (or an intervention) on an outcome and control for all the factors that might influence that outcome (Cresswell, 2014). In quasi experimental design, the researcher assign individuals to group. When one group receives a treatment and the other group does not, the researcher can identify whether it is the treatment or no other factors that influences the outcome. The researcher used quasi-experimental design of this research to see the effectiveness of THIEVES strategy toward students' reading comprehension ability in explanation text.

In this research, the researcher used pre-test and post-test on the control and experimental class, to see the effectiveness of THIEVES strategy by looking pre-test, and post-test measurement and comparing the gained scores between both classes. The effectiveness can be seen from the comparison of both classes. The experiment class was given the strategy by using THIEVES in the classroom and the controlled class without using THIEVES strategy.

B. Research Setting

The research was conducted at MA NIPI RAKHA which located on Jl. Rakha, Amuntai Utara, Hulu Sungai Utara Regency, Kalimantan Selatan Province 71471. The subject of this study was the second grade of MA NIPI RAKHA Amuntai in the academic year of 2018/2019.

The reasons why the researcher choose MA NIPI RAKHA as a research place because based on the observation at this school, the students are difficult to understand about reading comprehension and the teacher's way for teaching English like just use conventional teaching, therefore they are need the strategy to make an improvement in teaching and learning process.

C. Population and Sample

1. Population

Population is a whole subject in the research (Arikunto, 2006, p. 173). Population of this research is all the students at the second grade MA NIPI RAKHA in the academic year 2018/2019 which consist 199 students and divided into six classes. The distribution of the population is presented in Table:

Table 3.1		
The Population of the Students at The Second Grade of MA NIPI RAKHA 2018/2019		
Number	Class	Number of students
1	XI MAK	25
2	XI KEAG A	36

3	XI KEAG B	40
4	XI KEAG C	39
5	XI IPA	20
6	XI IPS	39
Total		199

2. Sample

A sample is a subgroup of the target population that the researcher plans to research for generalizing about the target population (Creswell, 2012, p. 309). It means, sample is the part of individual members which is chosen to represent the whole population. The second grade students of MA NIPI RAKHA in the academic year of 2018/2019 have the same chance to be the subject of this research. The researcher consulted to the English teacher about students' ability, difficulties and needs of the second grade students. Based on the consultation, it was known that the students of class MAK and class Keag A tended to have same ability, difficulties and needs in the learning process at the same department. Finally, the researcher chose the class randomly to determine which class will be the experimental class and which class will be the control class. As a result, class MAK became the control class and class B became the experimental class. The distribution of the sample is presented in Table:

No.	Classes	Number of students
1.	XI MAK (The control class)	25
2.	XI Keag A (the experimental class)	36

D. Research Instruments

This research used multiple choice question (MCQ) as a tool for assessing in order to know students' reading comprehension. The test is aim to measure students' reading comprehension. In measuring the students' reading comprehension, there are some criteria commonly used in measuring students' reading comprehension. Some specifications commonly will be used in measuring reading comprehension are main idea (topic), expression/idiom/phrases in content, grammatical feature, detail (scanning for a specifically stated detail), excluding fact not written, vocabulary in content (Brown & Priyanvada, 2010). The researcher prepared the try-out instrument in the form of multiple choice questions. The specification of try-out test can be seen in table:

No	Aspect	Items	Total
1	Main Idea (Topic)	1, 4, 7, 12, 16, 21, 27, 28, 30	9
2	Expression/Idiom/Phrase in context	9,	1
3	Grammatical features (reference)	18,	1
4	Detail (Scanning for a specifically stated detail)	5, 8, 10, 11, 14, 15, 17, 19, 20, 22, 23, 24, 26, 29, 32, 33, 36, 37, 38, 40	20
5	Excluding facts not written	2, 3, 6, 13, 34, 39	6
6	Vocabulary in context	25, 31, 35	3
Total			40

Based on the table above, it can be seen that there were 40 questions for try-out test. After the researcher applying the try-out test, the researcher analyzed the criteria of good test. The researcher analyzed to know the instrument's validity and reliability.

1. Validity of the Test Instrument

The validity is an important quality of any test. It is a condition in which a test can measure what is supposed to be measured. A test is valid if it measures what it purpose to be measured. The validity of an item can be known by doing item analysis (Arikunto, 2006, p. 65). To calculate the validity of the items used formula Product Moment Pearson as follow:

$$r_{xy} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Where:

r_{xy} = the correlation of the score on two halves of the test

N = the number of students in class

X = the score of each component of test

Y = the total score of correct answers

ΣX = the sum total X score in each class

ΣY = the sum of total score from each student in the class

Calculation result of r_{xy} is compared with r_{table} of product moment by 5% degree of significance. If r_{xy} is higher than r_{table} , the item of question is valid (Sugiyono, 2008 p. 65).

From the formula above, the researcher had done try-out test. The researcher calculated the try-out test by using Microsoft excel 2013. The result of this research was consulted to critical score for r-product moment or r_{table} . If r_{xy} was higher than r_{table} , it mean that a test was valid at 5% level significance. On the contrary, if $r_{xy} < r_{table}$ the item test was invalid and must be deleted from the test.

Table 3.4 Validity of Tryout			
Criteria	R table	Number of question	Total
Valid	0.444	2, 5, 7, 8, 9, 10, 12, 14, 16, 18, 19, 20, 23, 25, 28, 29, 30, 32, 35, 36	20
Invalid		1, 3, 4, 6, 11, 13, 15, 17, 21, 22, 24, 26, 27, 31, 33, 34, 37, 38, 39, 40	20

From the table above, it could be seen that 20 items were valid. The items test can be seen in the table below:

Table 3.5 The Specification of try-out test after validity test			
No	Aspect	Items	Total
1	Main Idea (Topic)	7, 12, 16, 28, 30	5
2	Expression/Idiom/Phrase in context	9	1
3	Grammatical features (reference)	18	1
4	Detail (Scanning for a specifically stated detail)	5, 8, 10, 14, 19, 20, 23, 29, 32, 36,	10
5	Excluding facts not written	2	1
6	Vocabulary in context	25, 35	2
Total			20

2. Reliability of The Test Instrument

Reliability refers to the consistency or stability of the scores obtained from a test (Arikunto, 2006, p. 196). In this research, Alpha formula is used to examine the reliability of the test instrument. The formula is as follows:

$$r_{11} = \left(\frac{n}{n-1} \right) \left(\frac{s - \sum pq}{s} \right)$$

Where:

r_{11} = the reliability of the instrument

n = the number of item in the test

p = the proportion of students who give the right answer

q = the proportion of students who give the wrong answer

s^2 = standard deviation of the test

Calculation result of r_{11} is compared with r_{table} of product moment by $\alpha=5\%$ of significance. If r_{11} is higher than r_{table} , the item is reliable. The researcher used statistical computation by using SPSS Statistic 25 to know the reliability of test and the result of the test was in high reliability with 0.841.

E. Data Collection Procedure

There are three steps that will be done in this research. They are as follows:

1. Planning

a. Determining the subject of the research

The subject of the research is the students at the second semester of second grade at MA NIPI RAKHA.

b. Preparing the try-out

Preparing a try-out test that will give to the students at second grade out of sample class.

c. Preparing the pre-test

Preparing the pre-test that will give to the students in control class and experimental class before the students get treatment used instrument which have already been tried out before.

d. Determining the material

After give pre-test to the students, determine the material for students is reading comprehension in narrative text.

e. Preparing the post-test

After preparing the post-test, give post-test to the students at the control class and experimental class after treatment.

2. Applying

After making the planning, there are some steps to apply the procedures that was already planned:

- a. In the first meeting, give try-out

The test is multiple choice that consist of 40 items with 4 options a, b, c, and d. this test will give to the students which is not become the sample of the research.

- b. In the second meeting, give pre-test

Pre-test to the control class and experimental class. The test is multiple choice, it is taken from the result of try-out test. It means that only the valid and reliable test item used in the pre-test.

- c. After giving the pre-test to the students, a treatment in experimental class with THIEVES strategy.

- d. In last meeting, give post-test.

3. Reporting

The last step in this research is reporting. There are as follows:

- a. Analyzing data received from try-out.
- b. Analyzing the data received from pre-test and post-test.
- c. Making a report based on finding.

F. Data Analysis

1. Unit Analyzing

- a. The formula will be used in scoring the students' correct answer is:

$$\text{Score} = \frac{\text{Students correct answer}}{\text{Total Number of items}} \times 10$$

- b. Assessing the students' reading comprehension scores by using the rubric below:

No.	Score	Criteria
1.	90 – 100	Excellent
2.	80 – 89	Very Good
3.	70 – 79	Good
4.	60 – 69	Fairly Good
5.	50 – 59	Fairly
6.	40 – 49	Poor
7.	40	Very Poor

- c. Computing the frequency and the rate percentage of the students' scores:

$$P = \frac{f}{N} \times 100 \%$$

Where:

P = Rate Percentage

f = Frequency of the correct answer

N = the total number of students

- d. This formula will use to know the mean score of the students' achievement:

$$X = \frac{\sum x}{N}$$

Where:

X = Mean score

$\sum X$ = the sum of all score

N = the number of subject (students)

2. Pre-requisite Test

Before testing the hypothesis, normality and homogeneity should be examined in this phase.

a. Normality Test

Normality test is implemented to find out whether the class have normal distribution index or not in this research (Sudjana, 1996, p. 273). In order to test the normality, the researcher used liliefors formula as follows:

$$z_i = \frac{x_i - X}{s} \quad X = \frac{\sum x}{n} \quad s = \sqrt{\frac{\sum x^2 - \frac{\sum x^2}{n}}{n-1}}$$

Where:

L_o (L obtained) > L_t (L table) = data do not have normal distribution.

L_o (L obtained) < L_t (L table) = data have normal distribution.

b. Homogeneity Test

Homogeneity test is conducted to find out whether the variances of scores in control and experimental groups are homogeneous or not. In order to test the homogeneity, formula as follow:

$$F = \frac{\text{highest variance}}{\text{lowest variance}}$$

The criteria in this test is to compare the F_{count} with F_{table} . Where if F_{count} lower or equal with F_{table} (\leq), so H_0 is accepted and H_a is rejected. H_0 accepted means homogeneous variance (Sugiyono, 2008).

c. Hypothesis Test

It is used to examine average whether experimental class and control class that has been decided having significant different average

$$H_0: \mu_1 = \mu_2$$

$$H_a: \mu_1 \neq \mu_2$$

The formula that used in the t-test as follows (Sudjana, 1996, p. 239).

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

With:

$$S = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}}$$

If the t_{count} score was higher than t_{table} score by using $\alpha = 5\%$ of significance, H_0 is rejected. It means that H_a was accepted: There was a significant difference in reading achievement between the experimental and control group. The researcher used statistical computation by using Microsoft excel 2013 to calculate the unit analyzing.